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# A revision of Phlegoninae (Coleoptera: Eucnemidae), with descriptions of a new genus and four new species

Robert L. Otto

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## A revision of Phlegoninae (Coleoptera: Eucnemidae), with descriptions of a new genus and four new species

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**Abstract.** A primitive subfamily of false click beetles (Coleoptera: Eucnemidae: Phlegoninae) distributed primarily in the Neotropical region is revised. *Euryphlegon* **gen. nov.** is described from Belize in Central America. New species include: *Phlegon chiriquiensis* **sp. nov.** (Panama), *Phlegon panamensis* **sp. nov.** (Panama), *Euryphlegon jacqueschassaini* **sp. nov.** (Panama) and *Euryphlegon parallelus* **sp. nov.** (Belize). *Phlegon herculeanus* (Lacordaire) **stat. res.** is resurrected from synonymy with *Phlegon buqueti* Laporte. One new combination is proposed: *Euryphlegon degallieri* (Muona) (*Phlegon*). Based on a number of observed external character traits, *Euryphlegon* is placed in Orodotini Muona, 1993 within Macraulacinae Fleutiaux, 1922. Identification keys are provided for species of *Phlegon* and *Euryphlegon* in the Neotropical region. The relationships among *Phlegon*, *Euryphlegon*, *Euryptychus* LeConte and other groups within Echthrogasterini Cobos, 1964 and Orodotini are discussed.

**Key Words.** Taxonomy, systematics, Neotropics, *Phlegon*, *Euryphlegon*, *Euryptychus*, Orodotini, Belize, Panama.

## Introduction

Phlegoninae are a small, primitive group of false click beetles distributed primarily in the Neotropical region. All species within the subfamily are confined largely to the southern areas of Central America and northern South America. One species, *Phlegon chiriquiensis*, is the largest and most robust false click beetle in the New World, with a female 34.0 mm long. It is slightly larger than *Perothops cervinus* Germar and *Perothops witticki* LeConte, both of California, U.S.A.

The taxonomic history for the group began with Laporte (1840), who described *Phlegon* and the species *Phlegon buqueti* as a member of Cebrionites, third division. His descriptions were based on a male in Buquet's collection; he surmised the species probably came from Brazil. Laporte (1840) noted from the descriptions that the group might belong to *Epiphanis* Eschscholtz and that it should be placed in Eucnemidae, but instead kept the species in Cebrionites.

Lacordaire (1857) provided a brief but more detailed description of the group, including the synonymy of *Euryptychus* LeConte with *Phlegon*. He opined that the absence of rami on two of the three terminal antennal segments (present in males of *Phlegon*) was too weak to maintain separation of these two groups. Lacordaire also referred to a third species, *Euryptychus herculeanus* Lacordaire, based on a series of specimens collected in California, communicated by Chevrolat and La Ferte, to support the synonymy of *Euryptychus* with *Phlegon*.

Bonvouloir (1875: 748–750) provided a more thorough description of *P. buqueti*, particularly differences between the sexes. He synonymized *P. herculeanus* with *P. buqueti* and supported Lacordaire's proposal to synonymize *Euryptychus* with *Phlegon*. He examined a number of specimens from Cayenne, including one from New Granada (present day Colombia).

Horn (1890) noted his *Phlegon viduus* (now *Euryptychus viduus*) has a simple fourth tarsal segment, which in his opinion should warrant separating the species within the group and revalidate *Euryptychus*. He distinguished *Euryptychus* (simple 4<sup>th</sup> tarsomere) from *Phlegon* (excavate 4<sup>th</sup> tarsomere). Fleutiaux (1897) affirmed Horn's position.

Fleutiaux (1921) placed *Phlegon* in the subfamily Melasinae Fleming, 1821, and Schenkling (1928), Blackwelder (1944) and Cobos (1962) followed his placement. Cobos (1962) placed *Phlegon* in the tribe Hylocharini Du Val, 1859. Muona (1993), through major changes to the higher classification of Eucnemidae, created the subfamily Phlegoninae for the group and placed it between Palaeoxeninae Muona, 1993 and Melasinae, based on numerous character states that defined the new subfamily in his analysis.

Since the discovery of *P. buqueti*, two more species have been added to *Phlegon*. Fleutiaux (1929) described *P. giganteus* from Costa Rica based on both sexes. Muona (1985) described *Phlegon degallieri* based on a single male from Cayenne, French Guiana. The current study adds four new species and a new genus, and removes one species from the synonymy of *P. buqueti*.

## Materials and Methods

Specimens were examined under quartz halogen illumination through a XTL-3300 series 7–90x zoom stereo trinocular microscope. Habitus, antennal and other structural images were taken with a JVC KY-F75U digital camera attached to a Leica® Z16 APO dissecting microscope with apochromatic zoom objective and motor focus drive, using a Synchroscope Auto-Montage® Pro System and software version 5.01.0005; resulting image stacks were processed using CombineZP®.

All images were captured as TIFF files during the imaging process. Each image was modified through Photoshop Elements 10® software on a Toshiba Satellite® C55 series laptop computer and all are collated into plates through the computer's paint program.

The study was based on the examination of 104 dry-mounted and pinned specimens borrowed from a small number of collections, with some communicated from J. Muona as noted below:

BMNH — The Natural History Museum, London, United Kingdom

GERP — Global Eucnemid Research Project, UW-Madison, Dept. of Entomology, Madison, WI, U.S.A.

INBC — Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica

INPA — Instituto Nacional de Pesquisas de Amazônia, Manaus, Brazil

JMC — Jyrki Muona Collection, Helsinki, Finland

MNHN — Muséum national d'Histoire naturelle, Paris, France

MSNG — Civic Museum of Natural History "G. Doria", Genova, Italy

SEMC — Snow Entomology Museum Collection, University of Kansas, Lawrence, KS, U.S.A.

TAMU — Texas A and M University Insect Collection, Dept. of Entomology, College Station, TX, U.S.A.

UCDIC — Bohart Museum of Entomology, UC-Davis, Davis, CA, U.S.A.

ZMHU — Museum für Naturkunde, Berlin, Germany

Label data are presented verbatim, with text for each individual label placed inside quotation marks and separated from an underlying label by a slash (/). Observed metadata for some labels are placed inside parentheses and/or brackets.

## Systematics

### Subfamily Phlegoninae Muona, 1993

**Diagnosis.** Form stout, oblong, elongate; antennal scape without lateral spine; antennae capitate, with expanded, elongate antennomeres IX–XI in some, others with pectinate antennomeres IX–X in males, sexually dimorphic; mandibles slender, without teeth; simple lateral pronotal ridge present; hypomera simple; legs slender; protibiae with two apical spurs; lateral surfaces of meso- and metatibiae with setae and irregularly placed spines; tarsomere IV bilobed, excavate; tarsal claws simple; protarsomere I without sex combs in males; aedeagus bulbous, with dorsally open large basal piece; median lobe entire, free, with both dorsal and ventral basal struts; lateral lobes with hooked apices; bursa bifurcate, highly modified, laterally constricted; spermatheca sclerotized, divided, with long pileated parts.

### Genus *Phlegon* Laporte, 1840

**Diversity and Distribution.** *Phlegon* is a small, primitive genus consisting of five species distributed primarily in the Neotropical region. Two species are widespread across a number of South American countries. The remaining three species are believed to be endemic to their respective countries.

**Diagnosis.** Form stout, oblong, elongate; scape without lateral spine; apical margin of frontoclypeal region evenly rounded and more than twice as wide as base; protibiae with two apical spurs, laterally without clusters of apical spine combs or transverse rows of spine combs along edge; metacoxal plates medially 3.0–6.0 times wider than laterally; last visible ventrite rounded caudally; aedeagus bulbous, dorsoventrally compressed, without secondary lateral lobes; median lobe simple, with moderately and narrowly bifurcate apices; lateral lobes simple, entire, flagellum simple.

### Key to the species of *Phlegon*

1. Punctures along elytral striae oblong ..... 2
- Punctures along elytral striae round ..... 3
- 2(1). Pronotum narrowing anteriorly ..... *P. giganteus* Fleutiaux
- Pronotum parallel-sided ..... *P. chiriquiensis* sp. nov.
- 3(1). Antennomeres IX–X pectinate (males) ..... 4
- Antennomeres IX–X dentate (females) ..... 6
- 4(3). Antennomere IX slightly shorter than X ..... 5
- Antennomere IX as long as X ..... *P. herculeanus* (Lacordaire)
- 5(4). Ramus of antennomere IX thicker, slightly longer in relation to length of segment ..... *P. buqueti* Laporte
- Ramus of antennomere IX thinner, at least 1.5 times longer than length of segment ..... *P. panamensis* sp. nov.
- 6(3). Antennomere IX slightly longer than X ..... 7
- Antennomere IX as long as X ..... *P. panamensis* sp. nov.
- 7(6). Antennomeres IX–X asymmetrically serrate ..... *P. herculeanus* (Lacordaire)
- Antennomeres IX–X simply serrate ..... *P. buqueti* Laporte

### *Phlegon buqueti* Laporte, 1840: 254–255

Fig. 1–5

**Diagnosis.** Rounded punctures along elytral suture distinguish this species from both *P. giganteus* and *P. chiriquiensis*. Males are distinguished from those of *P. herculeanus* by shorter antennomere IX in relation to X; subequal in both segments for *P. herculeanus*. Males are further distinguished from male *P. panamensis* by shorter, thicker antennal rami on antennomeres IX–X; elongate and thinner in *P. panamensis*. Females of *P. buqueti* are distinguished from those of *P. panamensis* by relative length of antennomere IX in relation to X: IX longer than X in *P. buqueti* and IX as long as X in *P. panamensis*. Females are further distinguished from those of *P. herculeanus* by shape of antennomeres IX–X: simply serrate in *P. buqueti* and asymmetrically serrate in *P. herculeanus*.

**Specimens Examined.** Six specimens were available for study: **COLOMBIA:** 1, (small pink square) / “13671” / “Columbien” (green label) / “Kgl.Museum f., Naturk. Berlin.” / “136” (handwritten) / *Phlegon grossus*, Moritz i. litt.” (handwritten) / “*Phlegon, buqueti*, Cast., FLEUTIAUX det. (genus, species and author handwritten) (ZMHU); **FRENCH GUIANA:** 1, “Guyane – Pt. de Vue, du Belvédère de Saül” / “Récoltes SEAG, 20.12.2010” (date handwritten) / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green framed white label) / “*Phlegon* ♂, *buqueti* Cast., J. Chassain det. 2016” (genus, species, author, sex symbol and year handwritten) (GERP); 2, “FRENCH GUIANA: Saül, vpr trap, 04.I.2011, SEAG” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green framed



white label) / “*Phlegon, buqueti*, Laporte, Det. R.L. Otto, 2016” (GERP); 1, “Guyane – Matiti, novembre 2012” / “PL. d’interception, J.L. Giuglaris” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green framed white label) / “*Phlegon* ♀, *buqueti* Cast., J. Chassain det. 2016” (genus, species, author, sex symbol and year handwritten) (GERP); **TRINIDAD**: 1, “Trinidad” (handwritten) / “*Phlegon, buqueti*, Cast., FLEUTIAUX det.” (Black framed discolored label; genus, species and author handwritten) / “Andrewes, Bequest., B.M.1922-221.” (BMNH).

**Redescription.** ♂: length 13.5–16.0 mm, width 4.0–5.0 mm. ♀: length 21.5–22.0 mm, width 7.0 mm. Body stout, oblong, elongate; uniformly dark brown; antennae brown; femora, tibiae and tarsi reddish brown; head, pronotum and elytra clothed with elongate, semierect yellowish setae (Fig. 1–2).

**Head:** Subspherical; frons convex, with deep round fovea present above frontoclypeal region; surfaces shiny, densely punctate; punctures variably sized; apical margin of frontoclypeal region rounded, about 2 times wider than base; mandibles slender, without teeth.

**Antennae:** ♂ (Fig. 3) about 2/3 of body length; antennomere III slightly longer than IV; antennomeres IV–VIII subequal, quadrate; antennomeres IX–X pectinate; rami thicker, as long as or slightly longer than length of respective segment, each arising near apex; antennomere IX slightly shorter than X, as long as antennomeres VII–VIII combined; antennomere X slightly longer than IX, shorter than XI, slightly longer than antennomeres VII–VIII combined; antennomere XI simple, cylindrical, longer than either IX or X. ♀ (Fig. 4) about 1/2 of body length; antennomere III longer than IV; antennomeres IV–VI longer than wide; antennomeres VII–VIII quadrate; antennomeres IX–X dentate; antennomere IX slightly longer than either X or XI, as long as antennomeres VII–VIII combined; antennomere X slightly shorter than antennomeres VII–VIII combined; antennomere XI simple, cylindrical, as long as X.

**Pronotum:** Surfaces shiny, densely, deeply punctate; punctures variably sized; wider than long, with large, sharp hind angles; sides parallel-sided at hind angles, gradually narrowing anteriorly; disc convex, with pair of shallow circular foveae; base sinuous.

**Scutellum:** Setose, punctate, quadrate and distally rounded.

**Elytra:** Striae formed from round punctures; interstices slightly elevated; surfaces shiny, shallowly punctate to transversely rugose; apices (Fig. 5) with deep, V-shaped cavities near elytral suture.

**Legs:** First tarsomere shorter than combined lengths of remaining four on meso- and metatarsi; tibiae rounded in cross section; metatarsomeres I–III simple; metatarsomere IV excavated, bilobed; metatarsomere V elongate; pretarsal claws simple.

**Venter:** Closely punctate, with elongate, recumbent yellowish setae; hypomera simple, without lateral antennal grooves; metepisterna parallel-sided; metacoxal plates medially 3.0–6.0 times wider than laterally.

**Distribution.** One specimen each were taken at unknown locales in Trinidad and Colombia. Four specimens were taken at separate locales in French Guiana.

**Biology.** Two specimens were taken from a mercury vapor light trap in French Guiana. One specimen was taken from a flight intercept trap. Larvae and pupae are unknown.

**Note.** From Laporte’s original description, noting antennal rami, *Phlegon* was based on a single male. Additionally, Laporte noted the insect probably came from Brazil, contrary to subsequent entomologists (i.e. Lacordaire 1857), who reported Cayenne as the type locality. The original species description was too brief and offered no means to distinguish *P. buqueti* from any closely related species distributed in southern Central America and South America.

Bonvouloir (1875) redescribed *P. buqueti* based on an undetermined number of specimens collected in Cayenne and Colombia. There is no evidence he never saw the male type. I was unable to locate the specimens Bonvouloir examined. Identification of the species was based on the comparisons between the specimens and the illustration of a female specimen in Bonvouloir (1872: pl. 36, fig. 4). Males were identified based on association with females collected together.

One female originally from Laporte's collection, bearing a "Cayenne" locality label, is currently in the Fleutiaux collection at the Paris museum. Since the description was based on a single male, this female cannot be the type of *P. buqueti*.

The type was presumably placed in Buquet's collection. According to Horn and Kahle (1935), Buquet's Eucnemidae went to Lafet -Sen ct re and Mniszech and from these collections to Bonvouloir or Oberth r. The location of the original male type is unknown and cannot be traced.

***Phlegon chiriquiensis* sp. nov.**

Fig. 6–8

**Diagnosis.** Oblong punctures along elytral suture distinguish this species from *P. buqueti*, *P. herculeanus* and *P. panamensis*. Parallel-sided pronotum distinguishes females of this new species from those of *P. giganteus*, which exhibit an anteriorly narrowing pronotum. Males of *P. chiriquiensis* are unknown.

**Type Material. Female holotype:** "Chiriqui." / "Phlegon n. sp., J. Muona det. 2014" / "**HOLOTYPE**:", *Phlegon, chiriquiensis*, Otto, det. R.L. Otto, 2016" (♀ handwritten behind species name on label) [red printed label]. Holotype deposited in MNHN.

**Description:** Length 34.0 mm, width 10.0 mm. Body stout, oblong, elongate; uniformly dark brownish black; antennae dark brownish black; femora, tibiae and tarsi dark brown; head, pronotum and elytra clothed with short, semierect copper-colored setae (Fig. 6).

**Head:** Subspherical; frons slightly depressed above frontoclypeal region, with small, round median tubercle; surfaces shiny, densely punctate to almost confluent rugose; apical margin of frontoclypeal region rounded, about 2 times wider than base; mandibles slender, without teeth.

**Antenna** (Fig. 7): About 1/2 of body length; antennomere III longer than IV; antennomeres IV–V slightly longer than wide, subequal; antennomeres VI–VIII quadrate, subequal; antennomeres IX–XI enlarged, tubular, very weakly dentate, each 3 times longer than wide, subequal, each as long as combined length of VI–VIII.

**Pronotum:** Surfaces shiny, punctures closely spaced; slightly wider than long, with large, sharp hind angles; parallel-sided, slightly constricted basally above hind angles; disc convex with 4 circular foveae, cranial pair much more impressed; base sinuous.

**Scutellum:** Setose, quadrate, elongate and distally rounded.

**Elytra:** Striae indicated, formed from oblonged punctures; interstices slightly elevated; surfaces shiny, shallowly punctate to slightly rugose; apices (Fig. 8) with deep V-shaped cavities near elytral suture.

**Legs:** First tarsomere shorter than combined lengths of remaining four on meso- and metatarsi; tibiae rounded in cross section; metatarsomeres I–III simple; metatarsomere IV excavated, bilobed; metatarsomere V elongate; pretarsal claws simple.

**Venter:** Closely punctate, with short, semierect copper-colored setae; hypomeron simple, without lateral antennal grooves; metepisterna parallel-sided; metacoxal plates medially 3.0–6.0 times wider than laterally.

**Distribution.** Known only from the type locality in Panama.

**Biology.** Larvae and pupae are unknown.

**Etymology.** Specific epithet is derived from a combination of two words, 'Chiriqui', the type locality from which the specimen was taken, and '-ensis', a Latin adjectival suffix meaning "pertaining to".



***Phlegon giganteus* Fleutiaux, 1929: 36–37**

Fig. 9–14

**Diagnosis.** Oblong punctures along elytral sutures distinguish this species from *P. buqueti*, *P. herculeanus* and *P. panamensis*. Shape of pronotum further distinguishes female *P. giganteus* from *P. chiriquiensis*, as it gradually narrows anteriorly in *P. giganteus* and is parallel-sided in *P. chiriquiensis*.

**Specimens Examined.** Six specimens were available for study: **COSTA RICA:** 1, “C. RICA: Gte prov., 1 mi. E. Los Angeles, 1-25-74, W. Vandevender.” / “J. Muona det., *Phlegon, giganteus*, Fleut.” (genus, species and author handwritten) / “*Phlegon giganteus*, Fleutiaux 1929, J. Muona det. 2014” (JMC); 1, “CR. Punt. Penin de OSA, Los Banzos de Rincon, 60m, 30-12-95, L. Aryubo, LS985200N/515600E” (illegible handwritten label) / “*Phlegon giganteus*, Fleutiaux 1929, D. Alaruikka det. 2007, J. Muona conf. 2015” (INBC); 1, “Casa Oeste, Cerro El, Hacha, 12km SE La Cruz, 300m, Guanacaste Prov., COSTA RICA, Jan 1988, A. Solis” / “*Phlegon giganteus*, Fleutiaux 1929, D. Alaruikka det. 2007, J. Muona conf. 2015” (INBC); 1, “Casa Oeste, Cerro El, Hacha, 12km SE La Cruz, 300m, Guanacaste Prov., COSTA RICA, Jan 1988, M. Espinosa” / “*Phlegon giganteus*, Fleutiaux 1929, D. Alaruikka det. 2007, J. Muona conf. 2015” (INBC); 1, “Los Almendros, P.N., Guanacaste, Prov. Guan., acaste, Costa Rica, 28, mar a 24 abr 1992, M. Reyes, L-N 334800, 369800” / “*Phlegon giganteus*, Fleutiaux 1929, D. Alaruikka det. 2007, J. Muona conf. 2015” (INBC); 1, “COSTA RICA Guan., 3km SE R. Naranjo, 1–10 Apr. 1992, F.D. Parker” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green framed, white label) / “*Phlegon, giganteus*, Fleutiaux, Det. R.L. Otto, 2005” (GERP).

**Redescription.** ♂: length 18.0–20.0 mm, width, 6.5–7.5 mm. ♀: length 25.0–31.0 mm, width, 8.0–9.0 mm. Body stout, oblong, elongate; uniformly dark brown; antennae dark brown; femora, tibiae and tarsi dark brown; head, pronotum and elytra clothed with short, semierect copper-colored setae (Fig. 9–10).

**Head:** Subspherical; frons depressed above frontoclypeal region; surfaces shiny, densely punctate to almost confluent rugose; apical margin of frontoclypeal region rounded, about 2 times wider than base; mandibles slender, without teeth.

**Antenna:** ♂ (Fig. 11): About 3/4 of body length; antennomere III slightly longer than IV; antennomeres IV–VIII quadrate, subequal; antennomeres IX–XI enlarged, tubular, dentate; antennomere X slightly shorter than either IX or XI; antennomeres IX and XI each as long as III–VIII combined; antennomere X as long as VI–VIII combined. ♀ (Fig. 12): About 1/2 of body length; antennomere III slightly longer than IV; antennomere IV slightly longer than wide; antennomeres V–VIII quadrate, subequal; antennomeres IX–XI enlarged, tubular, very weakly dentate; antennomere IX slightly longer than either X or XI; antennomere IX as long as VI–VIII combined; antennomeres X and XI each slightly longer than VI–VIII combined.

**Pronotum:** Surfaces shiny, punctures closely spaced; slightly wider than long, with large, sharp hind angles; sides anteriorly narrower, slightly constricted basally above hind angles; disc convex, variably with four circular foveae, anterior pair much more impressed; base sinuous.

**Scutellum:** Setose, quadrate, elongate and distally rounded.

**Elytra:** Striae indicated, formed from elongate punctures; interstices slightly elevated; surfaces shiny, shallowly punctate to slightly rugose; apices (Fig. 13) with shallow, V-shaped cavities near elytral suture.

**Legs:** First tarsomere shorter than the combined length of remaining four on meso- and metatarsi; tibiae rounded in cross section; metatarsomeres I–III simple; metatarsomere IV excavated, bilobed; metatarsomere V elongate; pretarsal claws simple.

**Venter:** Closely punctate, with short, semierect to recumbent copper-colored setae; hypomeron simple, without lateral antennal grooves; metepisterna parallel-sided; metacoxal plates medially 3.0–6.0 times wider than laterally.

**Aedeagus** (Fig. 14): Basal piece short, rounded, dorsally open; remaining parts bulbous, basally narrowed, widest near base of lateral lobes; median lobe short, ventrally curved, dorsally hooked at tip; lateral lobes ventrally curved, elongate, apically rounded and divergent.

**Distribution.** Taken from five localities throughout much of Costa Rica.

**Biology.** Some adults have been taken from montane cloud forests. Larvae and pupae are unknown.

**Note.** Muona (1985) reported finding the species at Izabal, Rio Dulce in Guatemala, but I was unable to examine and verify the identity of the eucnemid collected in Guatemala during the course of this study. The types of this species collected in Turrialba, Costa Rica, were not available for study.

***Phlegon herculeanus* (Lacordaire, 1857) stat. res.**

Fig. 15–19

*Euryptychus herculeanus* Lacordaire, 1857: 123 [footnote (2)]; pl. 41: 2–2a (as *P. herculeanus*).

**Diagnosis.** Rounded punctures along elytral sutures distinguish this species from both *P. giganteus* and *P. chiriquiensis*. Males are distinguished from those of *P. buqueti* by subequal length of antennomere IX in relation to X; antennomere IX shorter than X in *P. buqueti*. Males are further distinguished from male *P. panamensis* by shorter, thicker antennal rami on antennomeres IX–X; elongate and narrower in *P. panamensis*. Females of *P. herculeanus* are distinguished from those of *P. panamensis* by relative length of antennomere IX in relation to X; IX longer than X in *P. herculeanus* and IX as long as X in *P. panamensis*. Females are further distinguished from those of *P. buqueti* by shape of antennomeres IX–X; simply serrate in *P. buqueti* and asymmetrically serrate in *P. herculeanus*.

**Specimens Examined.** Thirty-seven specimens were available for study: **BRAZIL:** 1, “N<sup>o</sup>, INPA-spda Manaus, 25-III-1976 Am, A.P.A. Luna Dias” (“INPA-spda”, day, month and year handwritten) / “INPA” / “Colecao, do INPA” / *Phlegon buqueti*, Laporte 1840, J. Muona det. 2014” / “*Phlegon, herculeanus*, (Lacordaire), det. R.L. Otto, 2017” (INPA); 1, “Brazil – Am – Manaus, INPA, 30-4-1976, PARALUPPI” (day, month and year handwritten) / “Colecao, do INPA” / “*Phlegon buqueti*, Laporte 1840, J. Muona det. 2014” / “*Phlegon, herculeanus*, (Lacordaire), det. R.L. Otto, 2017” (INPA); **FRENCH GUIANA:** 1, “*Eur. herculeana*, nus Chevr, Cayenn.” (green label) / “*Phlegon, herculeanus*, (Lacordaire), det. R.L. Otto, 2017” (JMC); 1, (small, discolored square) / “*Phlegon, buqueti*, Cayenne Cast.” (handwritten in calligraphy; green-framed discolored label) / “MUSÉUM PARIS, ex coll., Castelnau, COLL. E. FLEUTIAUX” (“ex coll. Castelnau” handwritten) / “TYPE” (red printed label) / “Female specimen is, not the type for, *Phlegon buqueti* Lap., Robert L. Otto 2016” / “*Phlegon, herculeanus*, (Lacordaire), det. R.L. Otto, 2017” (MNHN); 2, “FRENCH GUIANA:, Saül vpr trap, 30.XII.2010, SEAG” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 1, “FRENCH GUIANA:, Matiti 21.X.2011, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 1, “FRENCH GUIANA:, Matiti 29.X.2011, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 2, “FRENCH GUIANA:, Matiti, 4.XI.2011, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 4, “FRENCH GUIANA:, Matiti 12.XI.2011, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 6, “FRENCH GUIANA:, Matiti 19.XI.2011, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 1, “FRENCH GUIANA:, Matiti 26.XI.2011, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 4, “FRENCH GUIANA:, Matiti, 21.X.2012, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 3, “FRENCH GUIANA:, Matiti, Nov. 2012, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 4, “FRENCH GUIANA:, Matiti, XII.2012, JLG leg.” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon, herculeanus*, (Lacordaire), Det. R.L. Otto, 2017” (GERP); 4, “French Guiana Matiti, 30 km NNW Cayenne, 5°3' N 52°36' W 12-2014, Jean Louis Giuglaris det”

/ "*Phlegon buqueti*, Laoprt 1840, J. Muona det. 2014" / "*Phlegon, herculeanus*, (Lacordaire), det. R.L. Otto, 2017" (JMC); **VENEZUELA:** 1, "Venezuela" (green label) / "Rivière, Caroni." / "*Phlegon, buqueti* Cast., FLEUTIAUX det. 1945 ♂" (genus, species, author, sex symbol and year handwritten) / "*Phlegon buqueti*, Laporte 1840, J. Muona det. 2014" / "*Phlegon, herculeanus*, (Lacordaire), det. R.L. Otto, 2017" (MNHN).

**Description.** ♂: length 12.0–18.0 mm, width, 4.0–6.0 mm. ♀: length 16.0–26.0 mm, width, 5.0–7.0 mm. Body stout, oblong, elongate; uniformly dark reddish brown; antennae brown; femora, tibiae and tarsi dark reddish brown; head, pronotum and elytra clothed with elongate, semierect yellowish setae (Fig. 15–16).

**Head:** Subspherical; frons convex, with shallow, round fovea above frontoclypeal region; surfaces shiny, densely punctate; punctures variably sized; apical margin of frontoclypeal region rounded, about 2 times wider than base; mandibles slender, without teeth.

**Antenna:** ♂ (Fig. 17): Antennomere III slightly longer than IV; antennomeres IV–VII longer than wide; antennomere VIII quadrate; antennomeres IX–X enlarged, pectinate; ramus thicker, as long or slightly longer than length of respective segment, arising near apices; antennomeres IX–X subequal, each as long as antennomeres VII–VIII combined; antennomere XI simple, tubular, longer than either IX or X. ♀ (Fig. 18): Antennomere III slightly longer than IV; antennomeres IV–VII longer than wide; antennomere VIII quadrate; antennomeres IX–X enlarged, asymmetrically dentate; antennomere IX longer than X, as long as antennomeres VII–VIII combined; antennomere X short, shorter than antennomeres VII–VIII combined; antennomere XI simple, longer than either IX or X, obliquely bent.

**Pronotum:** Surfaces shiny, densely, deeply punctate; punctures variably sized; wider than long, with large, sharp hind angles; sides gradually narrowing anteriorly, constricted above hind angles; disc convex; base sinuous.

**Scutellum:** Setose, punctate, subtriangular and distally rounded.

**Elytra:** Striae indicated, formed from round punctures; interstices slightly elevated; surfaces shiny, shallowly punctate; apices (Fig. 19) with deep, arrow-shaped cavities near elytral suture.

**Legs:** First tarsomere shorter than the combined length of remaining four on meso- and metatarsi; tibiae rounded in cross section; metatarsomeres I–III simple; metatarsomere IV excavated, bilobed; metatarsomere V elongate; pretarsal claws simple.

**Venter:** Closely punctate, with elongate, recumbent yellowish setae; hypomeron simple, without lateral antennal grooves; metepisterna parallel-sided; metacoxal plates medially 3.0–6.0 times wider than laterally.

**Distribution.** Two specimens have been taken from separate localities in Brazil. Thirty-four specimens have been taken from various localities in French Guiana. One specimen was taken in Venezuela.

**Biology.** Two specimens were taken from a mercury vapor light trap in French Guiana. Chassain and Touroult (2011) reported finding the species (as *P. buqueti*) to be relatively common in the country. Larvae and pupae are unknown.

**Note.** Lacordaire (1857) reported a number of specimens of *P. herculeanus* from both Chevrolat's and La Ferte's collections. He indicated one of the specimens was nearly an inch long and noted that specimens were taken in California. I regard that location to be erroneous.

Presumably the types were retained in the collections of Chevrolat and La Ferte. According to Horn and Kahle (1935), Laferté-Senectère's eucnemids went to Bonvouloir and Chevrolat's ended in Naturhistorisches Museum, Wien. I had no success in tracing them.

Identification of the species was based on comparisons with recently collected specimens and illustrations of a female (Lacordaire 1857; pl. 41: 2–2a), even though types of the species were not available for study. Males were identified based on association with females collected together. Comparison of antennal structures among females of the species compared with Lacordaire's illustration and recently collected specimens of *P. buqueti* indicate consistent differences in antennal structures between the two species. Female antennomeres IX–X are simply serrate in *P. buqueti* and asymmetrically serrate in *P. herculeanus*. Associated males of both species also exhibit differences in the antennal structures.

Antennomere IX is shorter than X in males of *P. buqueti*, whereas both segments are of subequal length in males of *P. herculeanus*. Based on these observations, *P. herculeanus* is resurrected from synonymy with *P. buqueti*.

***Phlegon panamensis* sp. nov.**

Fig. 20–25

**Diagnosis.** Rounded punctures along elytral sutures distinguish this species from both *P. giganteus* and *P. chiriquiensis*. Males are distinguished from those of *P. herculeanus* by shorter antennomere IX in relation to X; subequal in both segments for *P. herculeanus*. Males are further distinguished from male *P. buqueti* by elongate, thinner antennal rami on antennomeres IX–X; shorter and thicker in *P. buqueti*. Females of *P. panamensis* can be distinguished from both *P. buqueti* and *P. herculeanus* by relative length of antennomere IX in relation to X; antennomere IX longer than X in both *P. buqueti* and *P. herculeanus*, and IX as long as X in *P. panamensis*.

**Type Material. Male holotype:** “La Chorrera, 10.V.12 Pan, Aug. Busck” / “J. Muona det., *Phlegon, buqueti* Bon.” (genus, species and author handwritten) / “*Phlegon buqueti*, Laporte 1840, J. Muona det. 2014” / “**HOLOTYPE**:, *Phlegon, panamensis*, Otto, det. R.L. Otto, 2016” (♂ handwritten behind species name on label) [red printed label]. Holotype deposited in JMC.

**Paratypes:** 1 ♂, “Barro Colorado I, CZ Panama V, 18–22 1987, Hank Wolda” (month and dates handwritten) / “TRAP, 1A” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “**PARATYPE**:, *Phlegon, panamensis*, Otto, det. R.L. Otto, 2016” (♂ handwritten on label) [yellow printed label]; 1 ♀, “PAN. Colon Prv, Ft Espanar vic Marg, 2 June 1992, JE Wappes” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “**PARATYPE**:, *Phlegon, panamensis*, Otto, det. R.L. Otto, 2016” (♀ handwritten on label) [yellow printed label]. Paratypes are retained in GERP.

**Description. Male holotype:** Length 13.5 mm, width, 4.0 mm. Body stout, oblong, elongate; uniformly reddish brown; antennae reddish brown; femora, tibiae and tarsi reddish brown; head, pronotum and elytra clothed with elongate, semierect yellowish setae (Fig. 20).

**Head:** Subspherical; frons convex, with triangular fovea above frontoclypeal region; surfaces shiny, densely punctate; punctures variably sized; apical margin of frontoclypeal region rounded, about 2 times wider than base; mandibles slender, without teeth.

**Antenna** (Fig. 21): About 2/3 of body length; antennomere III longer than IV; antennomeres IV–V slightly longer than wide; antennomeres VI–VII quadrate; antennomere VIII wider than long; antennomeres IX–X enlarged, pectinate; ramus thinner, at least 1.5 times longer than length of respective segment, arising near apices; antennomere IX shorter than X; antennomere XI simple, elongate, tubular.

**Pronotum:** Surfaces shiny, densely, shallowly punctate; punctures variably sized; slightly wider than long, with moderate, sharp hind angles; parallel-sided at hind angles, gradually narrowing anteriorly above hind angles; disc convex, without circular fovea; base sinuous.

**Scutellum:** Setose, quadrate, elongate and distally rounded.

**Elytra:** Striae indicated, formed from round punctures; interstices slightly elevated; surfaces shiny, very shallowly punctate; apices (Fig. 22) with shallow cavities near elytral suture.

**Legs:** First tarsomere shorter than combined length of remaining four on mesotarsi; tibiae rounded in cross section; metatarsomeres I–III simple; metatarsomere IV excavated, bilobed; mesotarsomere V elongate; pretarsal claws simple.

**Venter:** Closely punctate, with elongate, semierect yellowish setae; hypomeron simple, without lateral antennal grooves; metepisterna parallel-sided; metacoxal plates medially 3.0–6.0 times wider than laterally.

**Aedeagus** (Fig. 23): Basal piece short, rounded, dorsally open; remaining parts bulbous, basally narrowed, widest near base of lateral lobes; median lobe short, ventrally curved, dorsally hooked at tip; lateral lobes ventrally curved, elongate, apically rounded.



**Variation.** Two paratypes were examined. The male paratype was 15.0 mm long and 5.0 mm wide, larger and wider than the holotype. The female paratype (Fig. 24) was 18.0 mm long and 6.0 mm wide, also larger and wider than the holotype. There are no notable differences between the male paratype and the holotype. The female paratype differs from the male holotype in four features. First color, the female paratype is much darker than the holotype: reddish brown in the holotype, dark brown in the paratype. Secondly, a pair of deep, circular foveae is present on the pronotal disc of the paratype (absent in the holotype). Thirdly, the triangular fovea is shallowly indicated above the frontoclypeal region in the paratype. Lastly, the female antennal structures (Fig. 25) differ from either the holotype or male paratype. For the female paratype, antennomere III is slightly longer than IV; antennomeres IV–V are longer than wide; antennomeres VI–VIII are slightly longer than wide; antennomeres IX–X are strongly dentate, subequal, each as long as antennomeres VII–VIII combined; antennomere XI is simple, cylindrical, and longer than either IX or X.

**Distribution.** This eucnemid has been taken from several localities in the country.

**Biology.** One specimen was taken presumably from a flight intercept trap placed in the Canal Zone. Larvae and pupae are unknown.

**Etymology.** The specific epithet is derived from a combination of two words, ‘Panama’ and ‘-ensis’, a Latin adjectival suffix meaning “pertaining to”.

#### Subfamily Macraulacinae Fleutiaux, 1922

#### Tribe Orodotini Muona, 1993

**Diagnosis.** Form oblong, elongate; scape with lateral spine; antennae capitate with antennomeres IX–XI expanded, elongate, or serrate; antennae usually sexually dimorphic; mandibles either slender, without teeth, or stout, bidentate; mandibles usually with expanded lateral sides; simple lateral pronotal ridge present; hypomera simple; legs slender; protibiae with one apical spur; lateral surfaces of meso- and metatibiae with setae and irregularly placed spines; tarsomere IV simple; pretarsal claws simple; protarsomere I without sex combs; aedeagus elongate, with dorsally open basal piece; median lobe distinct, fused with lateral lobes, with notched apices, without dorsal basal struts; bursa bifurcate, highly modified, laterally constricted; spermatheca sclerotized, divided, U-shaped.

#### *Euryphlegon* gen. nov.

**Type Species.** *Euryphlegon parallelus* sp. nov., by present designation.

**Diversity and Distribution.** *Euryphlegon* is a very small-sized genus consisting of several species primarily distributed in the Neotropical region. Two new species are distributed in several Central American countries. One species is distributed in French Guiana.

#### Key to species of *Euryphlegon*

1. Dorsum dark reddish brown; Central America ..... 2
- Dorsum dark brown; French Guiana ..... *E. degallieri* (Muona)
2. Pronotal hind angles straight; ♂: antennomere XI asymmetrical; ♀: antennomere XI shorter than X ..... *E. jacqueschassaini* sp. nov.
- Pronotal hind angles divergent; ♂: antennomere XI symmetrical; ♀: antennomere XI as long as X ..... *E. parallelus* sp. nov.

**Description.** Male. Body oblong, elongate, approximately 3.5 times longer than wide, dorsally convex and ventrally well sclerotized.

**Head:** Hypognathous, with short, recumbent setae. Antennae tubular, capitate with 11 antennomeres, setose; scape 3.0 times longer than pedicel, with hook-like lateral spine present beneath pedicel attachment; pedicel globular, shorter than III; antennomere III longer than IV; antennomeres IV–V subequal in length, slightly longer than wide and rounded in cross section; antennomeres VI–VIII subequal in length, quadrate and rounded in cross section; antennomeres IX–XI longer than wide. Eyes round, well developed, enlarged, slightly incised. Frontoclypeal region subtriangular, apically rounded, about 2 times wider than base. Mandibles well developed, stout, bidentate. Maxillary and labial palpi concealed behind mandibles. Labrum concealed.

**Pronotum:** Subparallel-sided, convex and setose. Sides gradually narrowed anteriorly. Lateral pronotal ridge entire, sinuate. Disc convex. Base sinuous.

**Scutellum:** Setose, slightly longer than wide, subtriangular.

**Elytron:** Elongate, convex, setose. Disc with striae indicated as smooth lines at humeri, punctate elsewhere. Interstices flattened. Cavities present near elytral apices.

**Legs:** Prothoracic legs shortest, metathoracic legs longest. Protibia apically truncated, flattened, setose, with one apical spur, laterally with clusters of spine combs at apices. Lateral sides of meso- and metatibiae with setae and irregularly placed flat spines. Metatarsi, including claws, as long as tibia. Protarsomere I without sex combs in males. First metatarsi as long as combined length of remaining four. Metatarsi I–III simple. Metatarsus IV excavate-emarginate, as wide as III. Metatarsus V elongate. Pretarsal claws simple. Tarsal formula 5–5–5.

**Venter:** Surface with recumbent setae. Prosternal peg basally broad, short. Notosternal suture slightly shorter than hypomeral base. Hypomeron simple, without antennal grooves. Epipleura simple. Metepisterna parallel-sided. Metacoxal plate medially 3.0–6.0 times wider than laterally. Tarsal grooves absent on meso- and metasterna. Abdomen with 5 visible ventrites, convex medially. Last visible ventrite rounded caudally.

**Etymology.** The new generic name is a combination of two eucnemid generic names, *Euryptychus* LeConte, 1871, “*Eury-*” and *Phlegon* Laporte, to indicate resemblance to both. Gender masculine.

***Euryphlegon degallieri* (Muona, 1985) comb. nov.**

Fig. 26–32

*Phlegon degallieri* Muona, 1985: 321–323

**Diagnosis.** Dark brown dorsum along with the distribution in French Guiana distinguish *E. degallieri* from both *E. jacqueschassaini* and *E. parallelus*.

**Specimens Examined.** Five specimens, including the holotype, were available for study: **FRENCH GUIANA:** 1 ♂, “GUYANA FRANC., Isle de Cayenne, Cabassou, (Piège eumineux)” (handwritten) / “en canopée, Fin X.1979, N. DEGALLIER” (handwritten) / “Museo Civico, di Genova” (grey; typed label) / “HOLOTYPE, *Phlegon, degallieri* n. sp., Muona des. 1984” (pink label; genus, species and year handwritten) / “HOLOTYPE, *Phlegon, degallieri*” (light reddish label; genus and species handwritten) (MSNG); 1 ♂, “Guyane française, Mtgne, des Chevaux, RN2 PK22, Roura 16.11.2008 SEAG” / “Piège intercept, à vitre” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon* ♂, *degallieri* Muona, J. Chassain det. 2016” (genus, species, author, sex symbol and year handwritten) / “*Euryphlegon, degallieri*, (Muona), Det. R.L. Otto 2016” (GERP); 1 ♀, “Guyane – Mgne des, Chevaux SEAG” / “Piège SLAM, 17 Septbre 2012” (“L” handwritten over “P”; “M” handwritten) / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / “*Phlegon* ♀, *degallieri* Muona, J. Chassain det. 2016” (genus, species, author, sex symbol and year handwritten) / “*Euryphlegon, degallieri*, (Muona), det. R.L. Otto, 2016” (GERP); “Matiti, 30 km NNW Cayenne, 5°3’N 52°36’W, September 2014, Jean Louis Giuglaris leg.” (JMC); “Matiti, 30 km NNW Cayenne, 5°3’N 52°36’W, November 2014, Jean Louis Giuglaris leg” (JMC).



**Redescription.** ♂: length 8.0–8.5 mm, width, 3.0 mm. ♀: length 9.5 mm, width, 3.0 mm. Body oblong, elongate; uniformly dark brown; antennae and legs dark brown; head, pronotum and elytra clothed with short, recumbent yellowish setae (Fig. 26–27).

**Head:** Subspherical, with variably delicate median carina at vertex extending down to frons; surfaces shiny, punctures closely spaced; apical margin of frontoclypeal region rounded, about 2 times wider than base; mandibles stout, bidentate, densely punctate.

**Antennae:** ♂ (Fig. 28): Antennomeres IX–XI capitate, about 2/3 of body length; antennomere III longer than wide, slightly longer than II; antennomeres IV–V slightly longer than wide; antennomeres VI–VIII subequal, quadrate; antennomeres IX–XI each much longer than wide, without lateral carina, each as long as combined length of V–VIII; antennomere X slightly shorter than either IX or XI; antennomere XI somewhat asymmetrical, slightly bent apically. ♀ (Fig. 29): Antennomeres IX–XI capitate, about 1/2 of body length; antennomere III longer than wide, slightly longer than II; antennomeres IV–V slightly longer than wide; antennomeres VI–VIII subequal, quadrate; antennomeres IX–XI each much longer than wide, without lateral carina; antennomere IX slightly longer than either X or XI, as long as combined length of IV–VII; antennomeres X and XI subequal, each shorter than IX, each as long as combined length of IV–VI.

**Pronotum:** Surfaces shiny, densely punctate; longer than wide, with moderate, sharp hind angles; parallel-sided in female, parallel-sided to slightly arcuate in males; disc convex, with delicate median carina and slightly round fovea above base; base sinuous.

**Scutellum:** Longer than wide, subtriangular and distally truncate to bilobed.

**Elytra:** Striae indicated as smooth lines at humeri, punctate elsewhere, somewhat obscured in middle; interstices flattened; surfaces shiny, transversely rugose; apices with six deep, round cavities in males (Fig. 30), female with two rows of small, round cavities in deep, parallel grooves near elytral suture.

**Legs:** First tarsomere as long as combined length of remaining four on meso- and metatarsi; tibiae rounded in cross section; metatarsomeres I–III simple; metatarsomere IV excavated, as wide as III; metatarsomere V elongate; pretarsal claws simple.

**Venter:** Closely punctate, with elongate, recumbent yellowish setae; hypomeron simple, without lateral antennal grooves; metepisterna parallel-sided; metacoxal plates medially 3.0–6.0 times wider than laterally.

**Aedeagus** (Fig. 31): Basal piece short, bilobed, dorsally open; remaining parts elongate, laterally constricted at base of lateral lobes, apically bilobed; median lobe elongate, narrow, apically rounded; lateral lobes curved, elongate, apically hooked.

**Distribution.** Taken from several localities in French Guiana.

**Biology.** One specimen was taken from a tree canopy. A second specimen was taken from a window flight intercept trap. Chassain and Touroult (2011) reported finding the species to be relatively common in the country. Larvae and pupae are unknown.

**Note.** I examined the holotype and observed the presence of a lateral spine on the scape just below the attachment of the pedicel, and lateral clusters of spine combs at the apices of the protibiae. Both features are absent in *Phlegon*. The species is transferred to *Euryphlegon* from *Phlegon* based on the presence of these features. The apical spur on the protibiae is obscured by the adhesive used to secure the holotype on the glue board. A male specimen (Fig. 32) in GERP was compared to the holotype.

***Euryphlegon jacqueschassaini* sp. nov.**

Fig. 33–37

**Diagnosis.** Apically straight pronotal hind angles distinguish *E. jacqueschassaini* from *E. parallelus*. Reddish-brown dorsum and Central American distribution further distinguishes it from *E. degallieri*.

**Type Material. Male holotype:** “Barro Colorado I., CZ Panama, III, 13–18 1987, Hank Wolda” (month in Roman numeral and date range handwritten) / “Trap, 3B” / **“EUCNEMIDAE; MACRAULACINAE; Euryptychus, sp., Det. R.L. Otto, 2008”** (year handwritten; folded) / **“HOLOTYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2016”** (♂ handwritten behind species name on label) [red printed label]. **Female allotype:** “Barro Colorado I., CZ Panama, III, 23–25 1987, Hank Wolda” (month in Roman numeral and date range handwritten) / “Trap 4B” / **“ALLOTYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2016”** (♀ handwritten behind species name on label) [yellow printed label]. Holotype and allotype are deposited in UCDIC.

**Paratypes.** 19 ♂♂, 16 ♀♀: **NICARAGUA:** 1 ♀, “Nica : Granada :, Volcan Mombacho, San Joaquin #1, 15-IV-98, Malaise trap col J.M. Maes” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2016”** (♀ handwritten behind species name on label) [yellow printed label] (GERP); **PANAMA:** 1 ♀, “Barro Colorado I., CZ Panama III, 7/10/12 1986, Hank Wolda” / “Trap, 4B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♀ handwritten behind species name on label) [yellow printed label] (UCDIC); 2 ♂♂, “Barro Colorado I., CZ Panama III, 14/17/19 1986, Hank Wolda” / “Trap, 4B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♂ handwritten behind species name on label) [yellow printed label] (1, JMC; 1, UCDIC); 1 ♂, “Barro Colorado I., CZ Panama III, 14/17/19 1986, Hank Wolda” / “Trap 2B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♂ handwritten behind species name on label) [yellow printed label] (UCDIC); 3 ♀♀, “Barro Colorado I., CZ Panama III, 14/17/19 1986, Hank Wolda” / “Trap 4B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♀ handwritten behind species name on label) [yellow printed label] (1, JMC; 2, UCDIC); 1 ♂, “Barro Colorado I., CZ Panama III, 21/24/26 1986, Hank Wolda” / “Trap 2A” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♂ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♂, “Barro Colorado I., CZ Panama III, 21/24/26 1986, Hank Wolda” / “Trap 2B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♂ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♂, “Barro Colorado I., CZ Panama III, 21/24/26/3 1986, Hank Wolda” / “Trap 4B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♂ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♂, “Barro Colorado I., CZ Panama IV-2, III 28/31 1986, Hank Wolda” / “Trap 2B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♂ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♀, “Barro Colorado I., CZ Panama IV-2, III 28/31 1986, Hank Wolda” / “Trap 2B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♀ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♀, “Barro Colorado I., CZ Panama IV-2, III 28/31 1986, Hank Wolda” / “Trap 4A” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♀ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♂, “Barro Colorado I., CZ Panama III, 2–6 1987, Hank Wolda” (month in Roman numeral and date range handwritten) / “Trap, 4B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2016”** (♂ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♂, “Barro Colorado I., CZ Panama III, 9–11 1987, Hank Wolda” (month in Roman numeral and date range handwritten) / “Trap, 4B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2016”** (♂ handwritten behind species name on label) [yellow printed label] (UCDIC); 2 ♂♂, “Barro Colorado I., CZ Panama III, 13–18 1987, Hank Wolda” (month in Roman numeral and date range handwritten) / “Trap, 2B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2016”** (♂ handwritten behind species name on each label) [yellow printed label] (UCDIC); 1 ♂, “Barro Colorado I., CZ Panama III, 13–18 1987, Hank Wolda” (month in Roman numeral and date range handwritten) / “Trap, 2B” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green-framed white label) / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2016”** (♂ handwritten behind species name on label) [yellow printed label] (GERP); 1 ♀, “Barro Colorado I., CZ Panama III, 13–18 1987, Hank Wolda” (month in Roman numeral and date range handwritten) / “Trap, 4B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto, 2017”** (♀ handwritten behind species name on label) [yellow printed label] (TAMU); 1 ♂ 1 ♀, “Barro Colorado I., CZ Panama III, 23–25 1987, Hank Wolda” (month in Roman numeral and date range and year handwritten) / “Trap, 2B” / **“PARATYPE; Euryphlegon, jacqueschassaini, Otto, det. R.L. Otto,**

2016" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label] (UCDIC); 1 ♂, "Barro Colorado I., CZ Panama III, 23–25 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 4B" / "Collection of the Global, Eucnemid Research Project, (Robert L. Otto)" (green-framed white label) / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016" (♂ handwritten behind species name on label) [yellow printed label] (GERP); 1 ♂ 1 ♀, "Barro Colorado I., CZ Panama IV, 1–3 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 4A" / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label] (UCDIC); 2 ♂♂, "Barro Colorado I., CZ Panama IV, 1–3 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 2B" / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016 (or 2017)" (♂ handwritten behind species name on each label) [yellow printed label] (1, UCDIC; 1, TAMU); 1 ♀, "Barro Colorado I., CZ Panama IV, 1–3 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 3B" / "Collection of the Global, Eucnemid Research Project, (Robert L. Otto)" (green-framed white label) / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016" (♀ handwritten behind species name on label) [yellow printed label] (GERP); 1 ♀, "Barro Colorado I., CZ Panama IV, 6–10 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 4A" / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016" (♀ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♀, "Barro Colorado I., CZ Panama IV, 6–10 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 2B" / "*Euryptychus*, sp., Det. R. Otto, 2008" / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2017" (♀ handwritten behind species name on label) [yellow printed label] (TAMU); 1 ♂, "Barro Colorado I., CZ Panama IV, 6–10 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 2B" / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016" (♂ handwritten behind species name on label) [yellow printed label] (UCDIC); 1 ♀, "Barro Colorado I., CZ Panama IV, 6–10 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 3B" / "Collection of the Global, Eucnemid Research Project, (Robert L. Otto)" (green-framed white label) / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016" (♀ handwritten behind species name on label) [yellow printed label] (GERP); 1 ♂ 1 ♀, "Barro Colorado I., CZ Panama IV, 13–17 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 2B" / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016" (either ♂ or ♀ handwritten behind species name on each label) [yellow printed label] (UCDIC); 1 ♀, "Barro Colorado I., CZ Panama V, 4–6 1987, Hank Wolda" (month in Roman numeral and date range handwritten) / "Trap, 2B" / "**PARATYPE:**, *Euryphlegon, jacqueschassaini*, Otto, det. R.L. Otto, 2016" (♀ handwritten behind species name on label) [yellow printed label] (UCDIC). Paratypes are deposited in GERP, JMC, TAMU and UCDIC.

**Description. Male holotype:** Length 8.0 mm, width, 2.0 mm. Body oblong, elongate; uniformly dark reddish brown; antennae and legs dark reddish brown; head, pronotum and elytra clothed with short, recumbent yellowish setae (Fig. 33).

**Head:** Subspherical, with median carina at vertex extending down to frons; surfaces shiny, punctures enlarged, evenly spaced, except at frontoclypeal region; apical margin of frontoclypeal region rounded, more than 2 times wider than base; mandibles stout, bidentate, densely punctate.

**Antenna** (Fig. 34): Antennomeres IX–XI capitate, about 3/4 of body length; antennomere III longer than wide, slightly longer than II; antennomeres IV–V slightly longer than wide; antennomeres VI–VIII subequal, quadrate; antennomeres IX–XI each much longer than wide, each as long as combined length of V–VIII; lateral keel present on antennomere IX; antennomeres IX and X subequal; antennomere XI slightly longer than either IX or X, asymmetrical.

**Pronotum:** Surfaces shiny; punctures closely spaced, slightly rugose laterally; as long as wide, with large, sharp, apically straight hind angles; lateral sides gradually narrowing anteriorly, slightly constricted above hind angles; disc convex; base sinuous.

**Scutellum:** Short, setose, shallowly punctate, subtriangular and distally truncate to bilobed.

**Elytra:** Striae indicated as smooth lines at humeri and near apices, elsewhere punctate, somewhat obscured in middle; interstices flattened; surfaces shiny, transversely rugose; apices (Fig. 35) with 15 deep, round cavities.

**Legs:** First tarsomere as long as combined lengths of remaining four on meso- and metatarsi; tibiae rounded in cross section; metatarsomeres I–III simple; metatarsomere IV excavated, as wide as III; metatarsomere V elongate; pretarsal claws simple.

**Venter:** Closely punctate, with elongate, recumbent yellowish setae; hypomeron simple, without lateral antennal grooves; metaepisterna parallel-sided; metacoxal plates medially 3.0–6.0 times wider than laterally.

**Female allotype** (Fig. 36): 8.5 mm long, 2.5 mm wide; antennae (Fig. 37) capitate, about 2/3 of body length; antennomere III longer than wide, slightly longer than II; antennomeres IV–V slightly longer than wide; antennomeres VI–VIII subequal, quadrate; antennomeres IX–XI each much longer than wide; lateral keel present on antennomeres IX and X; antennomere IX slightly longer than X, nearly as long as combined length of V–VIII; antennomere X as long as combined length of VI–VIII; antennomere XI distinctly shorter than X.

**Variation.** Male paratypes are 5.0–9.0 mm long and 1.5–3.0 mm wide, some are shorter and narrower than the holotype. Others are either subequal or larger and slightly wider than the holotype. Female paratypes are 6.0–9.5 mm long and 2.0–3.0 mm wide, with some being shorter than and just as wide as or wider than the holotype. At least several females are larger and wider than the holotype. One female is as long as the holotype, but slightly wider. A small number of paratypes examined exhibit a weak median carina extending from the vertex to the frons. Most of the paratypes exhibit a strong median carina. Lateral keels on antennomeres IX–X exhibit some degree of variability. At least two paratypes lack any lateral keel on both antennomeres. Some have weakly indicated lateral keels on antennomeres IX and X. Most of the paratypes examined exhibit strong lateral keels on both antennal segments.

**Distribution.** This species is known from several trap localities on the Barro Colorado Island within the Canal Zone of Panama. One specimen was also taken in Nicaragua.

**Biology.** All specimens were taken from flight intercept traps, including a Malaise trap in Nicaragua. Larvae and pupae are unknown.

**Etymology.** The specific epithet is dedicated to my friend and colleague Jacques Chassain of Comella-Ville, France, for his efforts in assisting me with answers to my many questions, and for providing specimens for my research.

***Euryphlegon parallelus* sp. nov.**

Fig. 38–42

**Diagnosis.** Apically divergent pronotal hind angles distinguish *E. parallelus* from *E. jacqueschassaini*. Reddish-brown dorsum and Central American distribution distinguish it from *E. degallieri*.

**Type Material. Male holotype:** “BELISE: Orange Walk Dist., Rio Bravo Conserv. Area, (rd. to Archeological site), 17°50'56"N, 89°02'34"W, 25-IV to 5-V-1996, C. Carlton #101, flt intcpt trap #1” / “**HOLOTYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2016” (♂ handwritten behind species name on label) [red printed label]. Holotype deposited in SEMC.

**Paratypes. 2 ♂♂, 6 ♀♀: BELIZE:** 1 ♀, “BELISE: Orange Walk Dist., Rio Bravo Conserv. Area, (rd. to Archeological site), 17°50'22"N, 89°01'12"W, 18–25-IV-1996, C. Carlton, ex: flight intercept trap #1” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2016” (♀ handwritten behind species name on label) [yellow printed label] (SEMC); 1 ♀, “BELISE: Orange Walk Dist., Rio Bravo Conserv. Area, (rd. to Archeological site), 17°50'49"N, 89°02'37"W, 25–30-IV-1996, C. Carlton #065, flt intcpt trap #1” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2016” (♀ handwritten behind species name on label) [yellow printed label] (SEMC); 1 ♀, “BELISE: Orange Walk Dist., Rio Bravo Conserv. Area, (rd. to Archeological site), 17°50'56"N, 89°02'34"W, 25-IV to 5-V-1996, C. Carlton #101, flt intcpt trap #1” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2016” (♀ handwritten behind species name on label) [yellow printed label] (SEMC).



on label) [yellow printed label] (SEMC); **COSTA RICA:** 1 ♀, “Prov. Guanacaste, Est. Mariza, 600m, Lado O Vol(ano) Orosi, Malaise trap, 1988, L-N 326900, 37300” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2017” (♀ handwritten behind species name on label) [yellow printed label] (INBC); 2 ♀♀, “Prov. Guanacaste, Est. Mariza, 600m, Lado O Vol(ano) Orosi, Malaise trap, 1990, L-N 326900, 37300” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2017” (♀ handwritten behind species name on label) [yellow printed label] (1, INBC; 1, JMC); 1 ♂, “Prov. Puntarenas, Est. Sirena, P.N. Corcovado, Malaise, Mar-Jun. 1991, L-N 270500, 508300” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2017” (♂ handwritten behind species name on label) [yellow printed label] (JMC); 2 ♀♀, “Prov. Guanacaste, Est. Mariza, 600m, Lado O Vol(ano) Orosi, Malaise trap, 1992, L-N 326900, 37300” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2017” (♀ handwritten behind species name on label) [yellow printed label] (1, INBC; 1 JMC); 1 ♀, “COSTA RICA Guan., 3km SE R. Naranjo, 15–19 Mar 1993, F.D. Parker” / “Collection of the Global, Eucnemid Research Project, (Robert L. Otto)” (green framed white label) / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2016” (♀ handwritten behind species name on label) [yellow printed label] (GERP); 1 ♀, “Prov. Guanacaste, Est. Murziélago, 8 km S.O. Cuajiniquil 18 Feb–25 Mar 1994, E. Araya, Malaise, L-N 32000, 347200 #2832” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2017” (♀ handwritten behind species name on label) [yellow printed label] (IMBC); 1 ♂, “Prov. Puntarenas, Est. Agujas, Sendero Ajo, 300m, Malaise, 19–24 Mar 1997, M. Lobo, L-S 276750, 526550, #45574” / “**PARATYPE:**, *Euryphlegon, parallelus*, Otto, det. R.L. Otto, 2017” (♂ handwritten behind species name on label) [yellow printed label] (INBC). Paratypes are deposited in GERP, INBC, JMC and SEMC.

**Description. Male holotype:** Length 7.0 mm, width 2.0 mm. Body color uniformly dark reddish brown (Fig. 38).

**Head:** Subspherical, with median carina extending from vertex to frons just above base of frontoclypeal region; surface shiny; punctures deep, closely spaced; eyes protuberant.

**Antennae:** Capitate, about 2/3 of body length; lateral carina present on antennomeres IX–X; antennomere XI weakly asymmetrical; dark reddish brown (Fig. 39).

**Pronotum:** Dark reddish brown; surface shiny, with somewhat elongate, yellow recumbent setae; punctures deep, closely spaced, almost rugose; as long as wide, with large, sharp, apically divergent hind angles; sides subparallel; disc convex; base sinuous.

**Scutellum:** Dark reddish brown, apically darker, somewhat shiny, setose, punctures shallow, subtriangular and distally rounded.

**Elytron:** Convex, elongate, gradually narrowed from humeri to apices; conjoined tightly at apex; somewhat shiny, with elongate, yellow recumbent setae; dark reddish brown; length 5.0 mm, width 1.0 mm at humeri; humeri with striae indicated as smooth lines; disc with punctate striae; interstices flattened, transversely rugose; apices (Fig. 40) with two rows of deep, round cavities in deep, parallel grooves near elytral suture.

**Legs:** Femora, tibiae and tarsi reddish brown; surface somewhat shiny; punctures shallow, with yellow recumbent setae.

**Venter:** Dark reddish brown; surface somewhat shiny, with elongate, yellow recumbent setae; punctate, except anterior 3/4 near lateral side of hypomeron.

**Variation.** The female paratypes (e.g. Fig. 41) are 8.0–9.0 mm long and 2.0–2.5 mm wide, all of them longer than and just as wide as or wider than the holotype. Females differ from the male holotype with respect to the antennal and pronotal structures. The terminal three antennomeres of the females are shorter than those of the holotype. Antennomere XI is as long as either IX or X (Fig. 42). The pronotal surface is more punctate than rugose in two of the four paratypes. The remaining two paratypes have pronotal surface features similar to the holotype.

**Distribution.** This species is known from several localities within the conservation area in northwestern Belize and a single locality in Costa Rica.

**Biology.** Four of the five specimens were taken from flight intercept traps placed near a subtropical forest. Larvae and pupae are unknown.

**Etymology.** The specific epithet is derived from the parallel-sided pronotum in both sexes.

**Discussion.** The placement of *Euryphlegon* posed an interesting challenge. The new genus is superficially similar to one of the *Phlegon* species and the macraulacine *Euryptychus*. There is a number of characters distinguishing *Euryphlegon* from both *Phlegon* and *Euryptychus*. Series of short, specialized spines along the lateral sides of the protibiae opposite of the apical spur (Fig. 43) are present in *Euryptychus*. Clusters of elongate, apical spines opposite of the protibial apical spur (Fig. 44) are present in *Euryphlegon*. These structures are absent (Fig. 45) in *Phlegon*.

Other characters include tarsomere IV simple in *Euryptychus*, weakly lobed in *Euryphlegon* and strongly lobed in *Phlegon*. Straight sex combs on protarsomere I are present in male *Euryptychus*, but absent in both *Phlegon* and *Euryphlegon*. Setae and simple spines are present along the lateral sides of the meso- and metatibiae (Fig. 46–47) in both *Phlegon* and *Euryphlegon*. Setae and transverse rows of spines are present along the lateral sides of the meso- and metatibiae (Fig. 48) in *Euryptychus*. The protibiae bear two apical spurs in *Phlegon* and one apical spur in both *Euryphlegon* and *Euryptychus*. A lateral spine is present just below the attachment of the pedicel on the scape (Fig. 49) in *Euryphlegon*, but is absent (Fig. 50–51) in both *Phlegon* and *Euryptychus*.

The lobed tarsomere IV, along with the absence of sex combs on protarsomere I and presence of setae and single spines along the lateral sides of the meso- and metatibiae, are shared between *Phlegon* and *Euryphlegon*. Only one character, presence of one apical spur on the protibiae, is shared between *Euryphlegon* and *Euryptychus*.

*Euryphlegon* was further compared against eight species within five genera in two other macraulacine tribes, Echthrogasterini and Orodotini, available for study. Within the tribe Echthrogasterini, *Euryphlegon* was compared against several species of *Hemiopsida* Macleay, *Henecocerus angusticollis* Bonvouloir and *Monrosina anelastoides* Cobos. The lateral spine just below the attachment of the pedicel on the scape is absent in all species of *Hemiopsida* and *H. angusticollis*. A lateral spine was observed in *M. anelastoides*. Muona (1993) was uncertain about the placement of *Monrosina* within the tribe due to the unavailability of the type. Based on the presence of the lateral spine on the scape, *Monrosina* is perhaps best placed in the tribe Orodotini rather than retaining the genus in Echthrogasterini.

*Euryphlegon* was further compared against two species of *Ceratogonys* Perty and *Eudorus irianiensis* Lucht. A lateral spine on the scape is present in all species of *Ceratogonys* and *E. irianiensis*. A cluster of elongate spines at the apices of the protibiae opposite the spur is evident in both species of *Ceratogonys* and *E. irianiensis*. These structures are also present in *M. anelastoides*. Based on the presence of these external character traits shared amongst these species present in the tribe, *Euryphlegon* is therefore placed in the tribe Orodotini.

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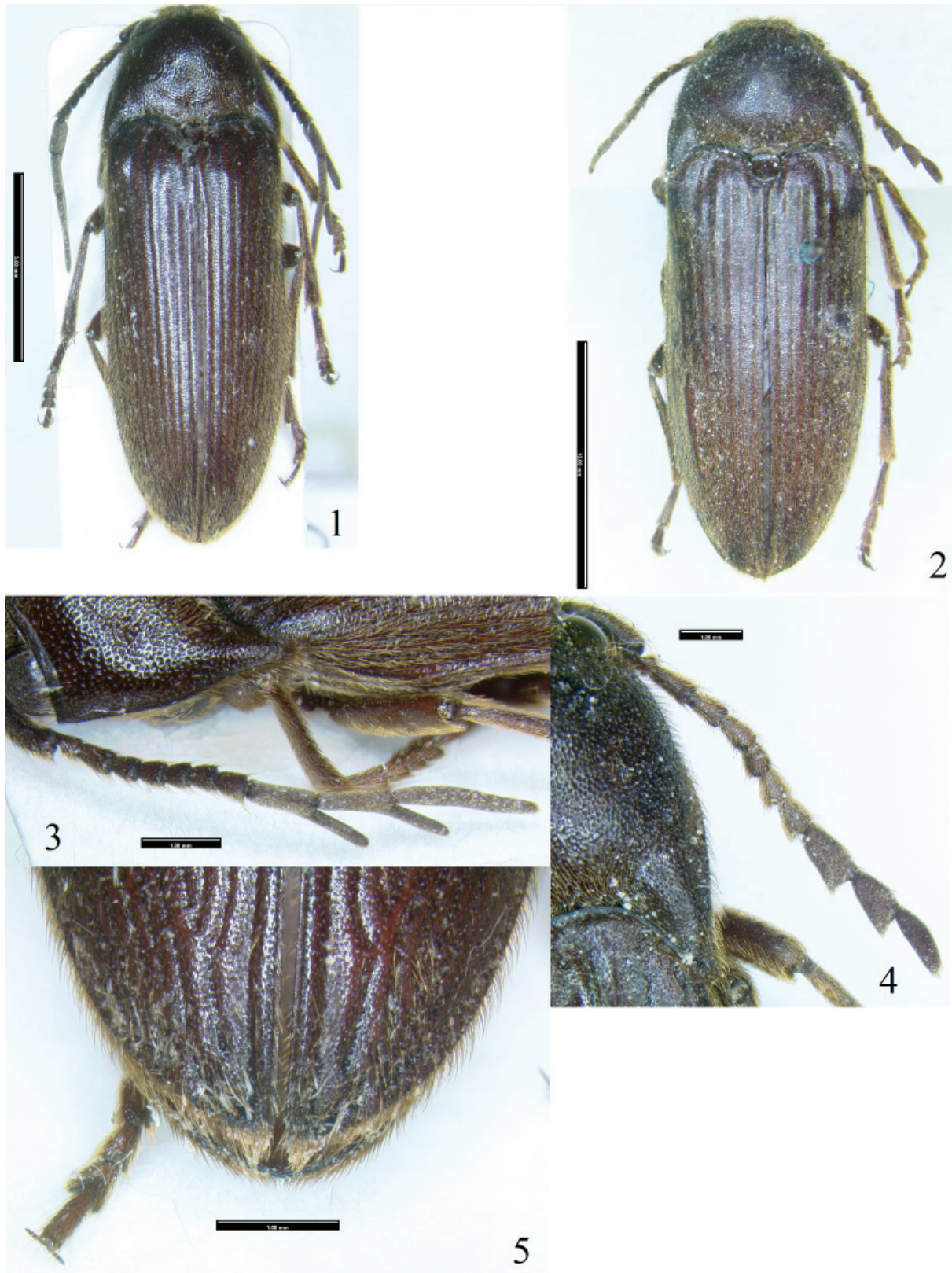
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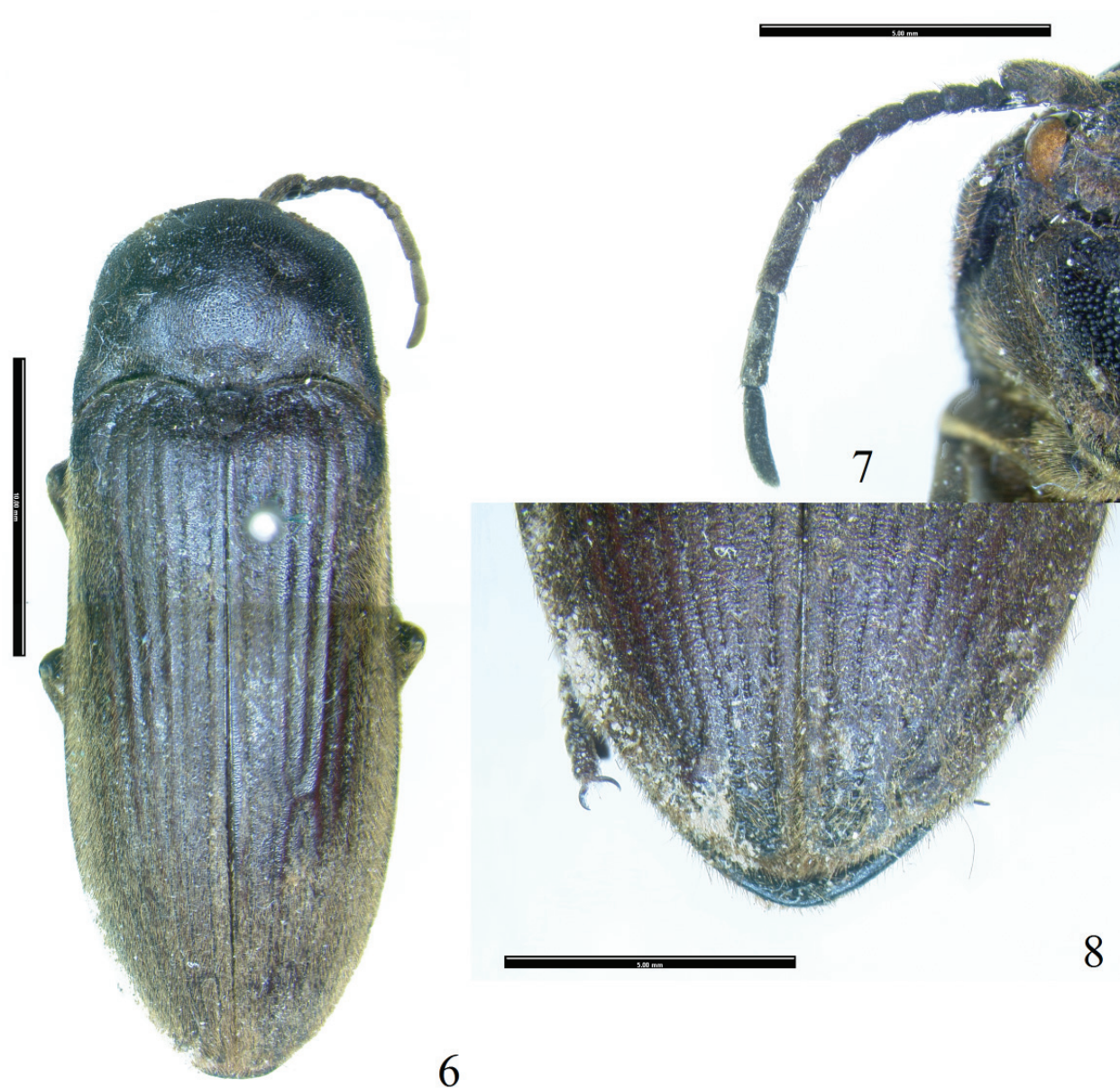
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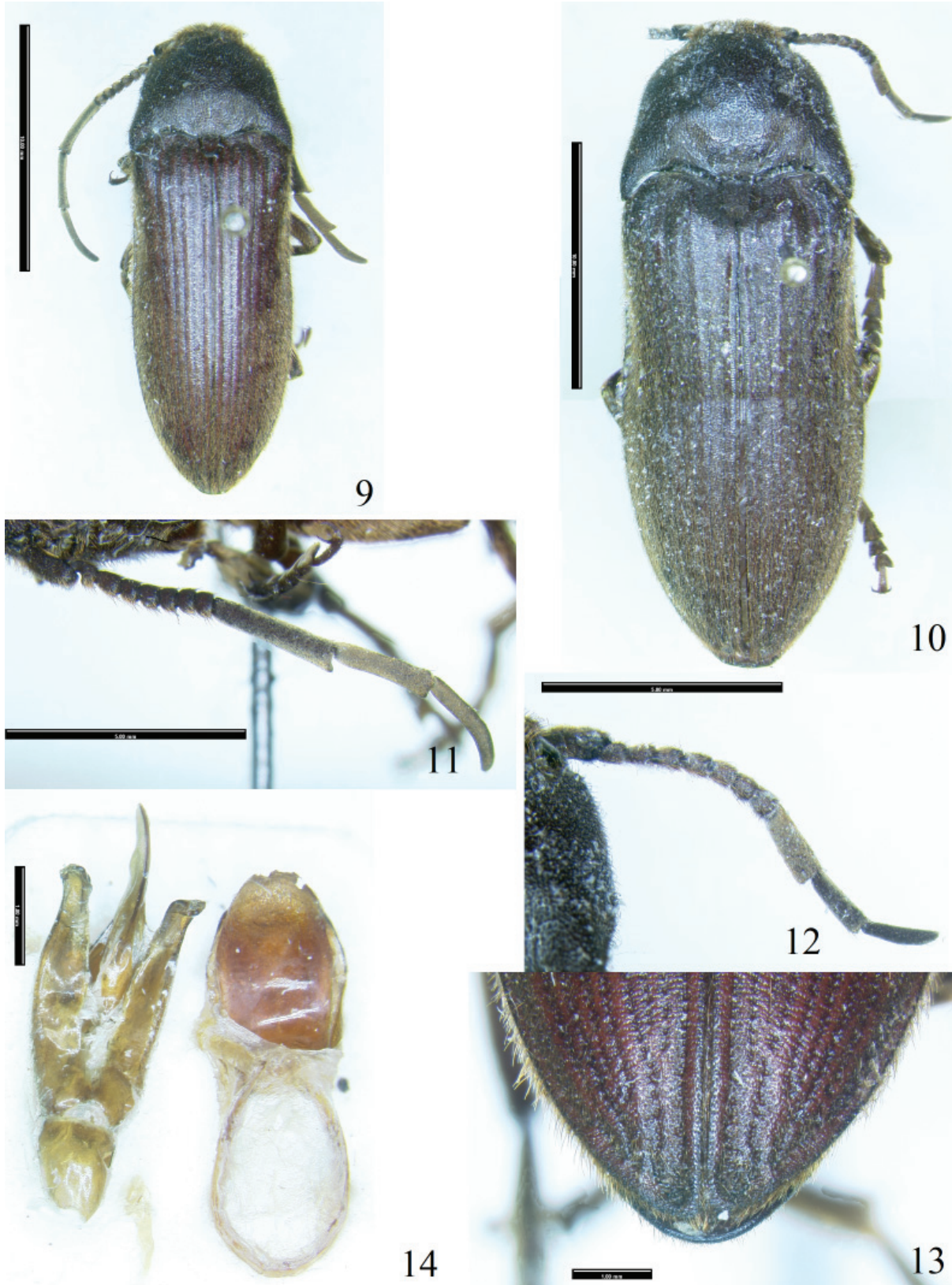


**Figures 1–5.** *Phlegon buqueti* Laporte. **1)** Male (GERP), dorsal habitus. **2)** Female (BMNH), dorsal habitus. **3)** Male antenna (GERP), lateral view. **4)** Female antenna (BMNH), dorsal view. **5)** Male elytral apices (GERP), dorsal view. (Scale: 1 = 5.0 mm; 2 = 10.0 mm; 3–5 = 1.0 mm)



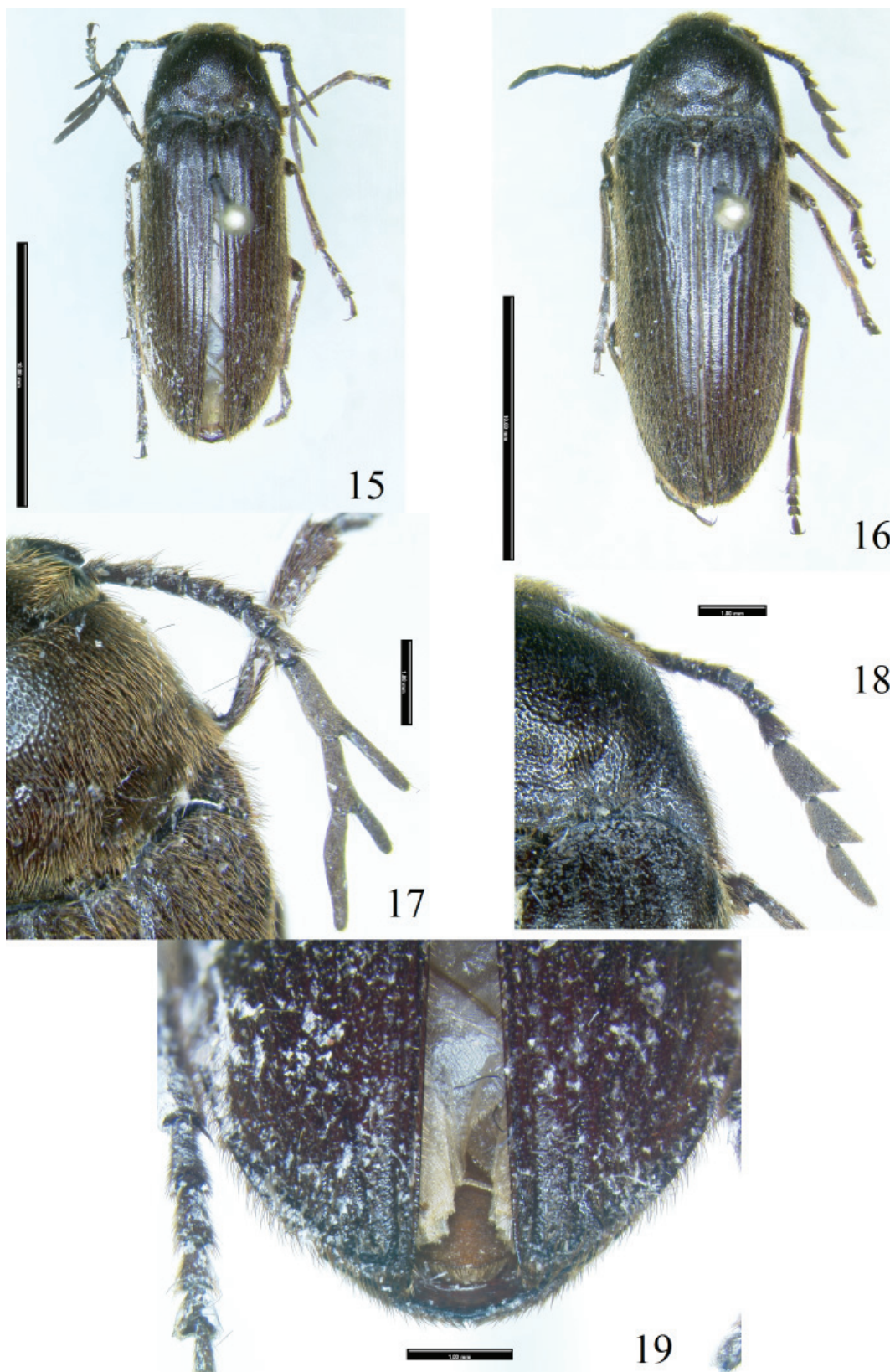


**Figures 6–8.** *Phlegon chiriquiensis* sp. nov. **6)** Female holotype (MNHN), dorsal habitus. **7)** Female holotype (MNHN), antenna, ventral view. **8)** Female holotype (MNHN), elytral apices, dorsal view. (Scale: 6 = 10.0 mm; 7–8 = 5.0 mm)

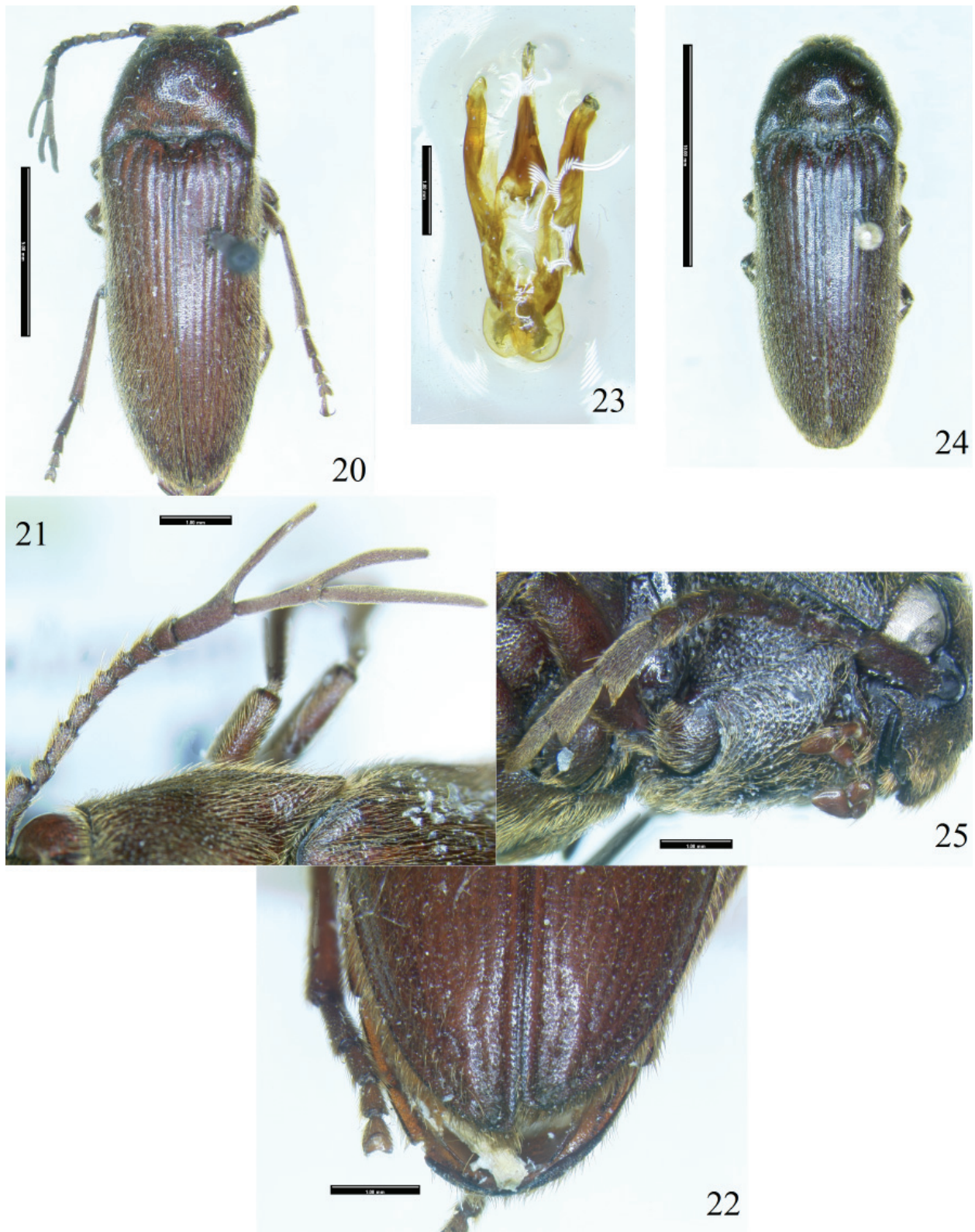


**Figures 9–14.** *Phlegon giganteus* Fleutiaux. **9)** Male (INBC), dorsal habitus. **10)** Female (INBC), dorsal habitus. **11)** Male antenna (INBC), lateral view. **12)** Female antenna (INBC), dorsal view. **13)** Male elytral apices (INBC), dorsal view. **14)** Aedeagus (INBC), ventral view. (Scale: 9–10 = 10.0 mm; 11–12 = 5.0 mm; 13–14 = 1.0 mm)



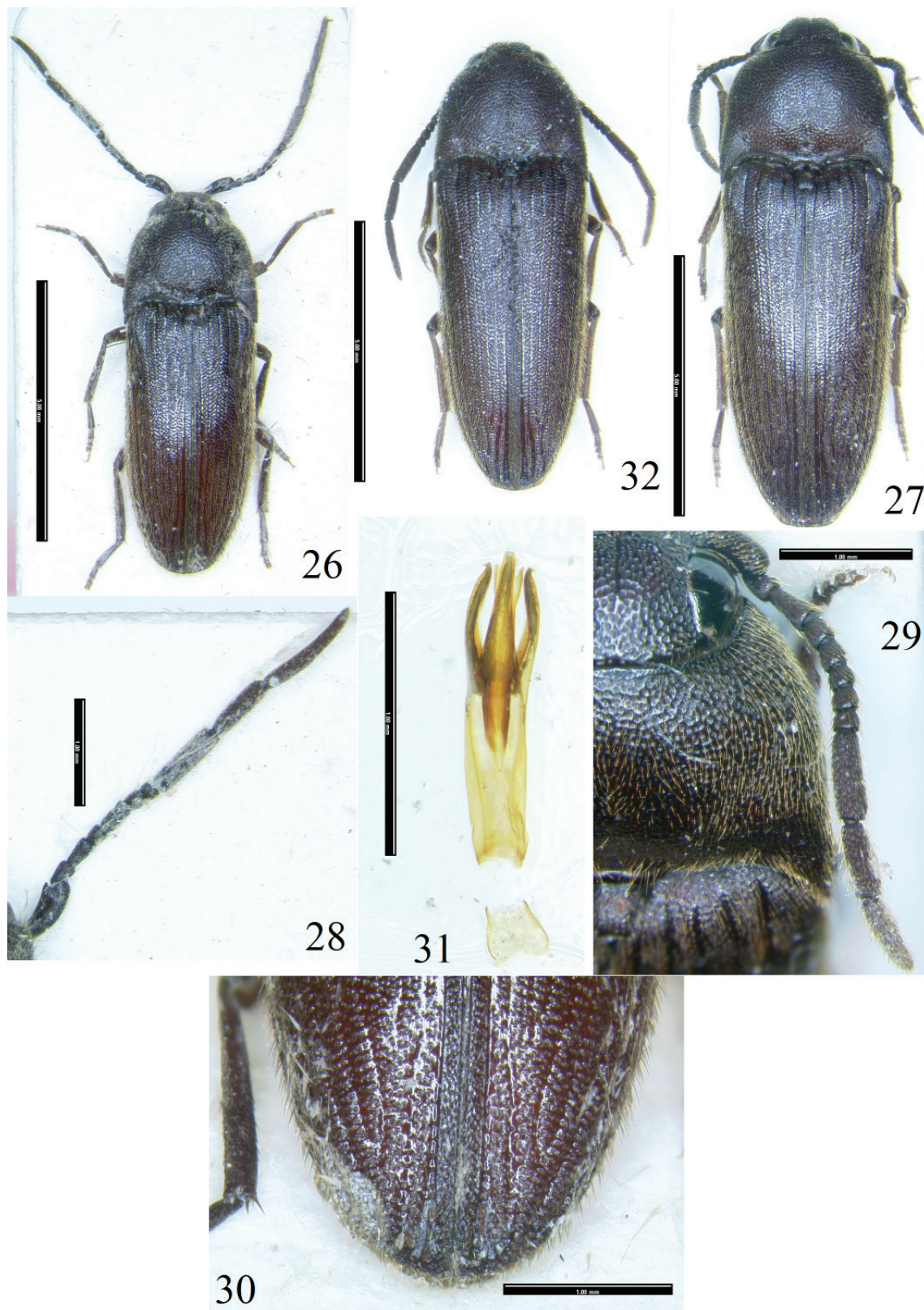


**Figures 15–19.** *Phlegon herculeanus* (Chevrolat). **15)** Male (JMC), dorsal habitus. **16)** Female (JMC), dorsal habitus. **17)** Male antenna (JMC), dorsal view. **18)** Female antenna (JMC), dorsal view. **19)** Male elytral apices (JMC), dorsal view. (Scale: 15–16 = 10.0 mm; 17–19 = 1.0 mm)

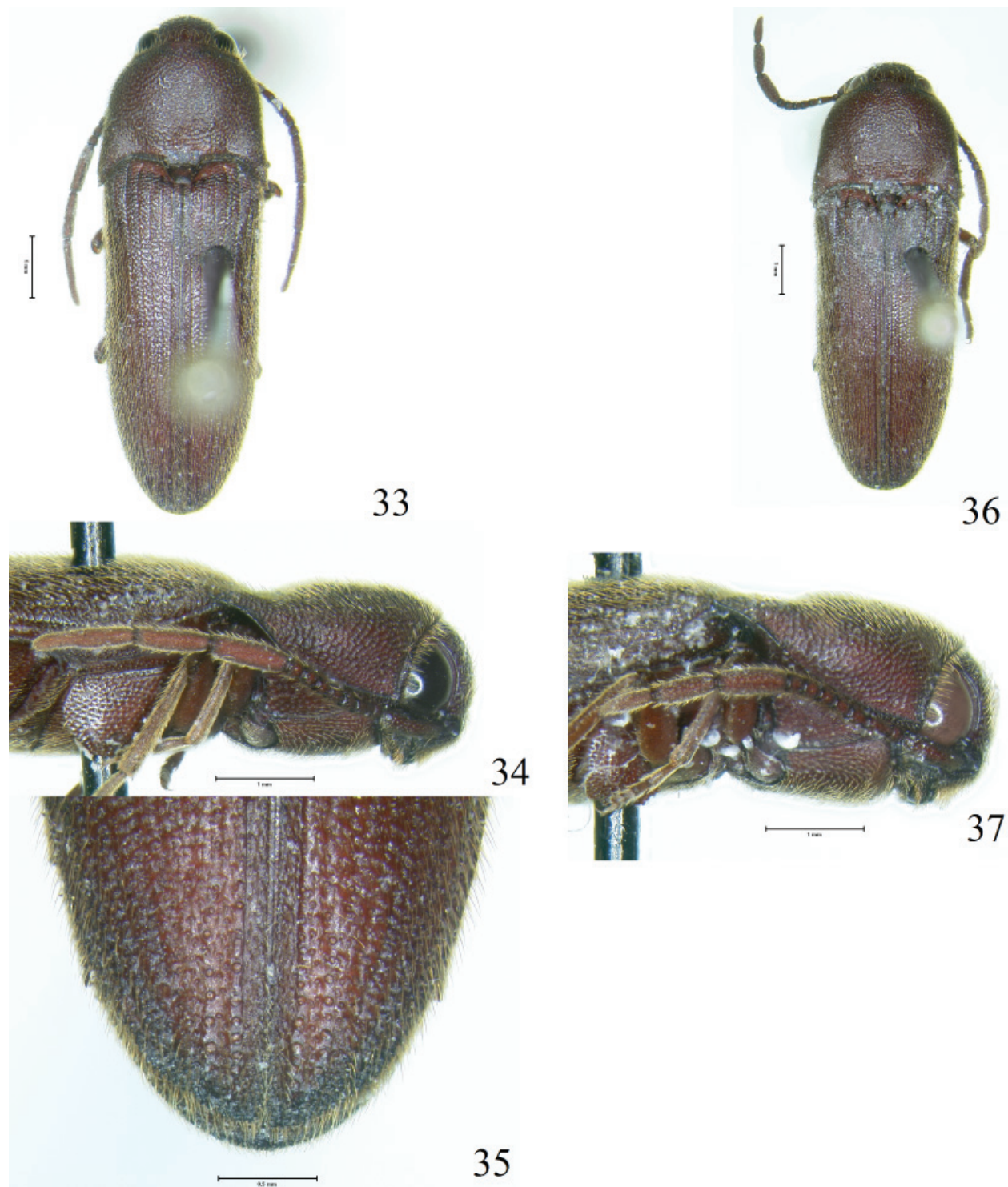


**Figures 20–25.** *Phlegon panamensis* sp. nov. **20)** Male holotype (JMC), dorsal habitus. **21)** Male paratype antenna (GERP), dorsal view. **22)** Male holotype elytral apices (JMC), dorsal view. **23)** Aedeagus of holotype, dorsal view. **24)** Female paratype (GERP), dorsal habitus. **25)** Female paratype antenna (GERP), lateral view. (Scale: 20 = 5.0 mm; 21–23, 25 = 1.0 mm; 24 = 10.0 mm)



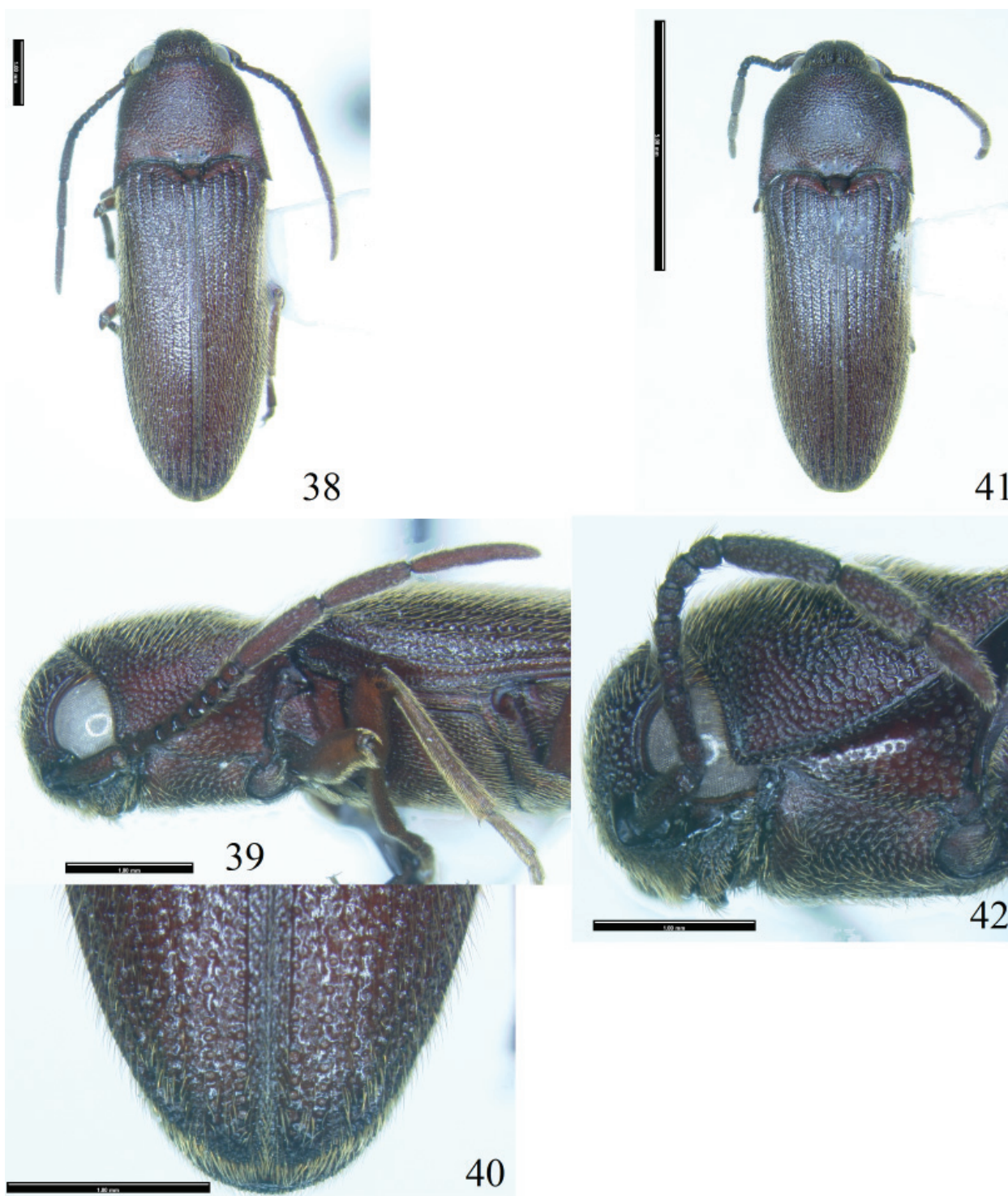


**Figures 26–32.** *Euryphlegon degallieri* (Muona). **26)** Male holotype (MSNG), dorsal habitus. **27)** Female (GERP), dorsal habitus. **28)** Male holotype antenna (MSNG), dorsal view. **29)** Female antenna (GERP), dorsal view. **30)** Male holotype elytral apices (MSNG), dorsal view. **31)** Aedeagus of holotype, dorsal view. **32)** Male specimen (GERP), dorsal habitus. (Scale: 26–27, 32 = 5.0 mm; 28–31 = 1.0 mm)

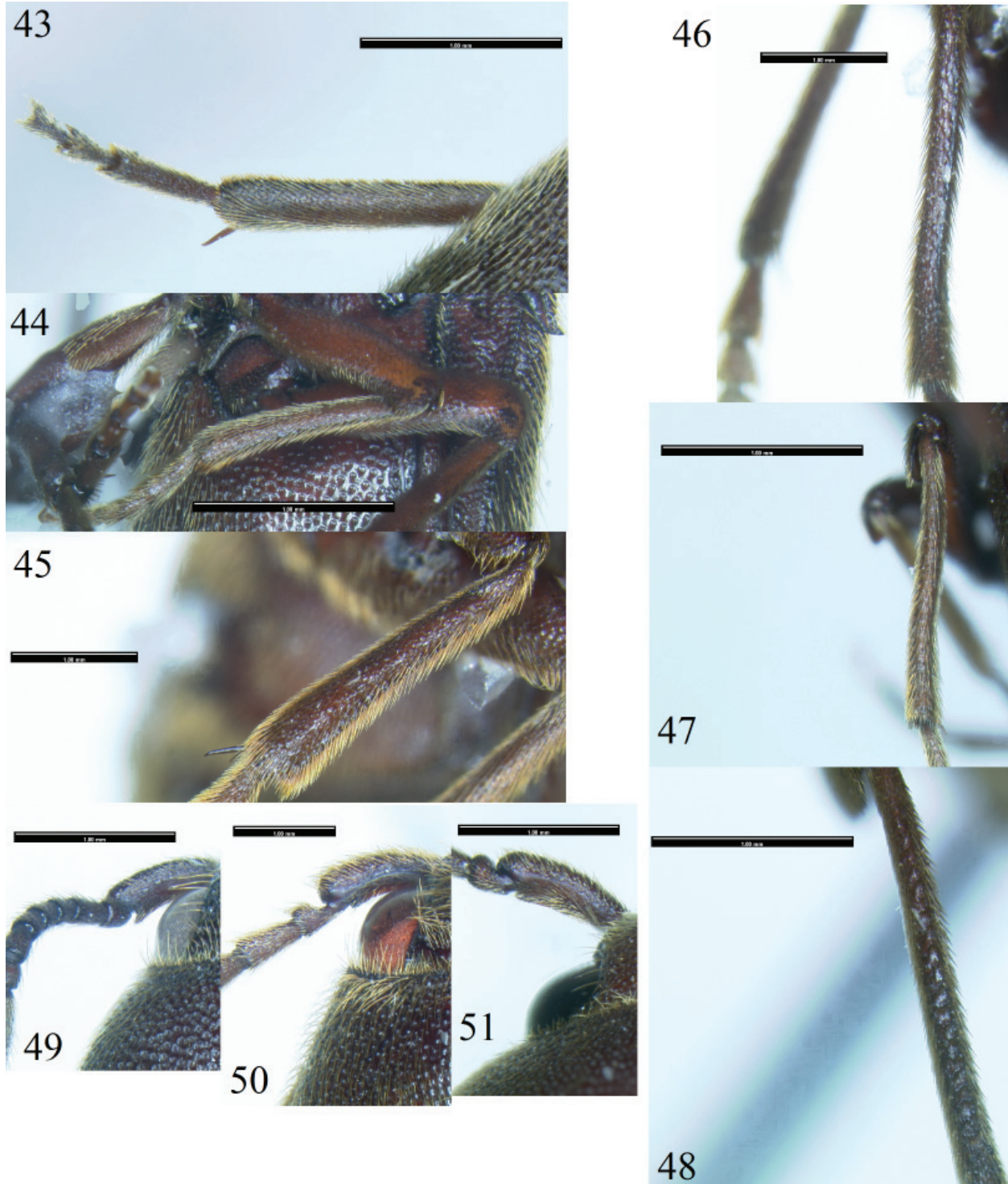


**Figures 33–37.** *Euryphlegon jacqueschassaini* sp. nov. **33)** Male holotype (UCDIC), dorsal habitus. **34)** Male holotype antenna (UCDIC), lateral view. **35)** Male holotype elytral apices (UCDIC), dorsal view. **36)** Female allotype (UCDIC), dorsal habitus. **37)** Female allotype antenna (UCDIC), lateral view. (Scale: 33–34, 36–37 = 1.0 mm; 35 = 5.0 mm)





**Figures 38–42.** *Euryphlegon parallelus* sp. nov. **38)** Male holotype (SEMC), dorsal habitus. **39)** Male holotype antenna, lateral view. **40)** Male holotype elytral apices (SEMC), dorsal view. **41)** Female paratype (GERP), dorsal habitus. **42)** Female paratype antenna (GERP), lateral view. (Scale: 38–40, 42 = 1.0 mm; 41 = 5.0 mm)



**Figures 43–51.** Eucnemidae. **43)** *Euryptychus heterocerus* LeConte, protibia, lateral view. **44)** *Euryphlegon parallelus* **sp. nov.**, protibia, lateral view. **45)** *Phlegon panamensis* **sp. nov.**, protibia, lateral view. **46)** *Phlegon panamensis* **sp. nov.**, mesotibia, lateral view. **47)** *Euryphlegon parallelus* **sp. nov.**, mesotibia, lateral view. **48)** *Euryptychus heterocerus* LeConte, mesotibia, lateral view. **49)** *Euryphlegon parallelus* **sp. nov.**, scape, dorsal view. **50)** *Phlegon panamensis* **sp. nov.**, scape, dorsal view. **51)** *Euryptychus heterocerus* LeConte, scape, dorsal view. (Scale: 43–51 = 1.0 mm)

